Homework Week 02 – Trikebot, Literature Review and Web Page Setup

Due Week 03

1. Construct the Trikebot (build instructions posted on web site). Create an NxC program and demonstrate your Trikebot to move in a figure-8 path.

2. Search the web for 10 articles (preferably from technical sources like IEEE and ASME) that describe the mechanisms for kicking, passing, receiving and blocking. After reading each paper answer the following:
   A. Scan (or sketch if no figure available) an image of the mechanism (kicking, passing, receiving and/or blocking)
   B. Write 1-paragraph that describes how the mechanisms operate
   C. Write 1-paragraph that describes how successful that design worked (e.g. did that team win any games) and what the aspects that you like and dislike about their mechanisms

3. Create a web page with the following items
   A. Team Name
   B. Team members and Freshman Design Group Number
   C. Use a section heading entitled “Literature Survey: Mechanisms” and post
      - PDFs of the 10 articles and/or URLs for these articles
      - Answers to 2A to 2C for each article
   D. Slide 1: Photo of your slider-crank. A 10-second WMV-format video in operation
   E. Slide 2: 4 photos (e.g. above figure) with parts (part names/numbers) and steps

NB: For parts names and numbers see: http://guide.lugnet.com/partsref/technic

4. Refer to the Lego BricxCC Programming Lab. In Exercise 2, you made motors rotate. Write a program (with comments on each line), that makes a motor on Port A rotate from 180 to -180 degrees, 3 times.

5. Refer to Exercises 2 and 3 where you respectively made NXT motors rotate and respond to the touch sensor. Write a program where the motor rotates clockwise when the touch sensor is not pressed and rotates faster counter-clockwise when the touch sensor is pressed

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